

## Ferns of New England and Old England

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It was my fortune this last summer to spend two months in New England. Most of the time was spent in the State of Connecticut, but some excursions were also made into Massachusetts. My trips were mainly confined to the woods around New Britain and Hartford, but it will doubtless be admitted that one could have gone to many a less favorable district. I was particularly fortunate in meeting several keen botanists. The name of H. C. Bigelow is well known to New England fernists. To him I am indebted for enabling me to see many of the rarer ferns growing in their carefully guarded haunts.

It is natural that I should have made many mental comparisons between the ferns of New England and those of Great Britain, and a few observations may be of some interest to readers of the AMERICAN FERN JOURNAL.

The climatic conditions of New England are, I believe, as similar to those of Great Britain as those of any part of the States. This being so, I was rather surprised to find so few British species among your flora. Out of the fifty or so New England species, some sixteen alone are found in this country. The genera, however, are, on the whole, similar. You have several *Aspleniums*, *Aspidiums* and *Polypodiums*, as we have. The differences, therefore, seem specific rather than generic, which, when one comes to think of it, is only natural.

Perhaps at this point, I had better state that I will speak of the ferns by the names to which I am accustomed. A few remarks later on concerning differences of nomenclature will be added, so that no confusion may arise.



*Nephrodium filix-mas*, one of your rarities, is one of our commonest ferns. Nevertheless, before I left, I had begun to sympathize with the cry of the American fernist, "Oh for a few days in Vermont to look for the male fern!" I believe your male fern is fairly constant in type; ours is very variable, so that at least three distinct forms are described, one being practically evergreen.

*Nephrodium cristatum* is rare and extremely local with us. I do not think the variety *Clintonianum* has ever been found. We have, too, *N. thelypteris*, one of your very commonest ferns, but in England it is local, being quite absent in many districts. You would miss your New York fern, but you would find instead *N. montanum*, the mountain buckler fern, which it resembles in many ways.

Your polypodies are mainly the same as ours. *Polypodium vulgare*, *P. dryopteris* and *P. phegopteris* are British species, but you have in addition *P. hexagonoptera*. A point that interested me was the difference in habitat between *P. vulgare* as it grows in the Connecticut woods and as it grows here. In American it is essentially a rock plant, growing on tops of huge boulders in next to no soil, in dry situations where even *Nephrodium marginale* can scarcely exist. From these rocks it can be pulled off in great sheets, the roots of numerous plants being matted together. Here, we look for the fern, not on rocks, but on old trees, growing in a considerable depth of leaf mould; or frequently they luxuriate in the rich, cool hedges of our country lanes, such lanes as I never saw in America. Your polypody too, is on the whole smaller and more leathery in the frond than our average form.

The species of shield ferns (usually classed under *Nephrodium* here) are more numerous in New England. *Nephrodium spinulosum* and its two varieties, *intermedium* and *dilatatum*, are familiar to American fernists.



The form *intermedium*, commonest with you, does not occur at all in Britain; *dilatatum*, your rarest, is far more common here than the type, and with us is not essentially a mountain form.

The genus *Aspidium* is represented by *A. aculeatum* and its variety *angulare*, and *A. Lonchitis*. If I remember rightly, *A. aculeatum* var. *Braunii* is the only New England representative of the group.

Were you to visit our woods, how you would miss *Nephrodium marginale*, and your common Christmas fern! These are, however, sometimes seen in cultivation. Your noble *Nephrodium Goldieanum* is also absent.

We have some *Aspleniums* in common with you. *A. Trichomanes* is fairly common with us, *A. viride* much rarer, but *A. Ruta-muraria* is often found plentifully growing in the mortar of old walls. *A. ebeneum* is not found here.

*Asplenium filix foemina*, the lady fern, is very common with us and is very variable, but *A. thelypteroides* is not found. By the way, many British fernists refuse to admit the lady fern to the genus *Asplenium*, preferring to put it into another genus, *Athyrium*.

We have only one royal fern—*Osmunda regalis*. Somehow I could never convince myself that your form is not quite distinct from ours. Your form seemed to me to be rather less robust and more graceful than ours, with other differences which I am unable to describe. The cinnamon and interrupted ferns, which I got rather tired of seeing so often, are only found here as imported varieties.

*Woodsia ilvensis*, fairly abundant with you, is quite a rarity here, occurring only in high mountains in Scotland. *W. hyperborea* is our only other species, also very rare. Our only *Botrychium* is *B. Lunaria*, which is not common. *Ophioglossum vulgatum* is rather more frequent. My experience of it is that it does not grow in



such marshy places here as in America. I well remember a marsh near New Britain where this adder's tongue grew in thousands, and I compare the place mentally with a dryish field in England where it was also abundant. But my experience of it in either country is limited.

We have no representative of *Lygodium*, *Dicksonia*, *Onoclea*, *Woodwardia*, *Pellaea* or *Camptosorus*. *Adiantum capillus-veneris* is British, growing scarcely on the cliffs of the south of England and Wales. *Pteris aquilina* is everywhere. *Cystopteris fragilis* cannot be called common, while *C. bulbifera* is absent.

*Scolopendrium vulgare*, so desirable a find in the States, is plentiful in most parts of this country; in places it literally occurs in thousands. The larger forms are found in hedges and woods, but smaller forms are found abundantly growing with the mortar-loving spleenworts on old walls.

I was interested to note the stress laid in the States upon hybrids. Before I left, I believe I could recognize such forms as *Nephrodium cristatum*  $\times$  *marginale* when I saw them, and I must confess I was quite convinced of the true hybrid character of these. Here, however, authenticated cases of hybridization between different species are considered to be extremely few and one gets little encouragement to discuss them. What the British fernists do love are the natural variations of the ferns, the crested and the tasselled forms, which inspire no enthusiasm in the States. We have a wonderful selection of varieties now in cultivation, especially, of such ferns as the male fern, the lady fern, the harts tongue and the prickly shields. Somehow these variations seem to occur much more frequently in our country than in yours, though you can, I believe, lay claim to having produced the only variety of *Nephrodium thelypteris* (*polydactyla*) that has been found in a wild state.



Finally, I might mention, with regard to nomenclature, that most botanists here follow the Kew Gardens authorities. We employ the term *Nephrodium* where you prefer *Dryopteris*, though fern cultivators in particular also use the name *Lastraea*. Our prickly shield ferns we call *Aspidium* (though here again *Polystichum* is still frequently used). The oak and the beech ferns are classed under *Polypodium* because of their round, naked sori. The lady fern, as previously mentioned, is not placed under *Asplenium* by all, as indeed it bears no resemblance to the spleenworts, which are evergreen, rock-loving plants.

I have, of course, omitted to mention several British species which you do not have, but perhaps sufficient has been said for a general comparison of the ferns of the two countries. I personally retain the most pleasant memories of the hours I spent studying the New England ferns, and if it be possible, should like nothing better than another holiday on your side of the Atlantic.

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### Notes and news

#### THE FRAGRANT SHIELD FERN

MR. EDITOR:

When just about ready to send you, for the JOURNAL, something about my experience with *Dryopteris fragrans*, by accident I learned that soon after I lost a valued friend, and correspondent in ferns, of years before, the FERN BULLETIN had published for the second time a part of that experience. So let me call this experience Continued. I hope not Concluded, for I want to climb old Mansfield five or six times more. And my "gala days," as I called that of my first view of the *fragrans*,